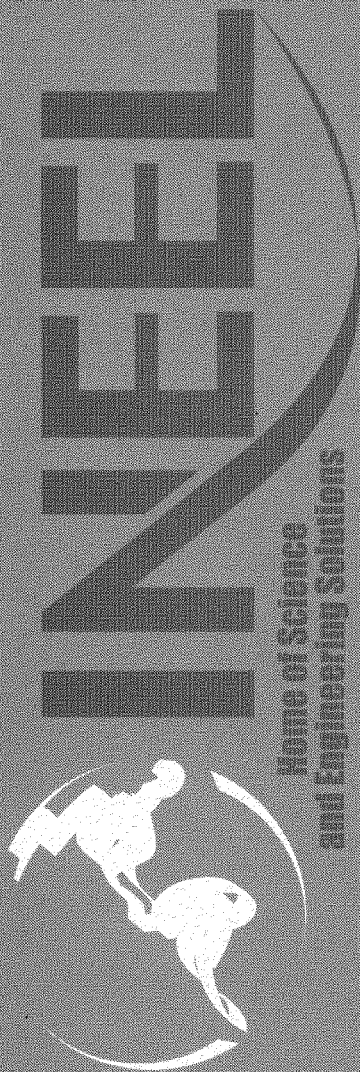


***Technical Support Facility-06
and Technical Support
Facility-26 Calendar Year 2000
Sampling and Remediation
Summary Report for Waste
Area Group 1, Operable
Unit 1-10***

October 2002



*Idaho National Engineering and Environmental Laboratory
Bechtel BWXT Idaho, LLC*

**Technical Support Facility-06 and Technical Support
Facility-26 Calendar Year 2000 Sampling and
Remediation Summary Report for Waste Area
Group 1, Operable Unit 1-10**

October 2002

**Idaho National Engineering and Environmental Laboratory
Environmental Restoration Program
Idaho Falls, Idaho 83415**

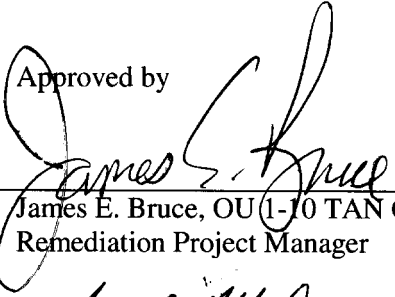
**Prepared for the
U.S. Department of Energy
Assistant Secretary or Office of Environmental Management
Under DOE Idaho Operations Office
Contract DE-AC07-99ID13727**

**Technical Support Facility-06 and Technical Support
Facility-26 Calendar Year 2000 Sampling and
Remediation Summary Report for
Waste Area Group 1, Operable Unit 1-10**

INEEL/EXT-02-01135
Revision 0

October 2002

Approved by


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10/17/02
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Date

ABSTRACT

This report summarizes the sampling and remediation events performed at the Technical Support Facility-06, Area B (also known as the Soil Contamination Area south of the [railroad] turntable), and the Technical Support Facility-26 (also known as the PM-2A Tanks, Test Area North), during the calendar year 2000, to satisfy the requirements of Waste Area Group 1, Operable Unit 1-10 Record of Decision (1999). Sampling and remediation activities conducted at the Technical Support Facility-26 included the sampling, analysis, excavation, and containerization in soil bags of soil stockpiles and a wooden box. Activities conducted at the Technical Support Facility-06, Area B, included radiological field screening and sample analysis to support soil excavation of the contaminated overburden soil, subsequent removal of the contaminated overburden, and further field screening and sample analysis to support future remediation. Following completion of all sampling and remediation activities at the Technical Support Facility-06, Area B, and Technical Support Facility-26 sites and receipt of no-longer contained-in determinations from the State of Idaho Department of Environmental Quality, the containerized soil was transported to the Radioactive Waste Management Complex for disposal. Final activities included winterization of the Technical Support Facility-06, Area B, site and decontamination of a backhoe that was used for remediation.

Where applicable, references are provided for documents contained in the Idaho National Engineering and Environmental Laboratory Environmental Restoration Optical Imaging System which contain additional information regarding the calendar year 2000 sampling and remediation events performed to satisfy the requirements of the Waste Area Group 1, Operable Unit 1-10 Record of Decision (1999).

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ACRONYMS

DOE-ID	Department of Energy Idaho Operations Office
EROIS	Environmental Restoration Optical Imaging System
IDEQ	Idaho Department of Environmental Quality
INEEL	Idaho National Environmental Engineering Laboratory
NLCI	no-longer contained-in
OU	operable unit
PCB	polychlorinated biphenyls
RI/FS	remedial investigation/feasibility study
ROD	Record of Decision
RPSSA	Radioactive Parts Security Storage Area
RWMC	Radioactive Waste Management Complex
STD	Standard
TAN	Test Area North
TSF	Technical Support Facility
VOC	volatile organic compound
WAG	waste area group
WRRTF	Water Reactor Research Test Facility

Technical Support Facility-06 and Technical Support Facility-26 Calendar Year 2000 Sampling and Remediation Summary Report for Waste Area Group 1, Operable Unit 1-10

1. INTRODUCTION

1.1 Purpose

The purpose of this report is to provide a summary of the sampling and remediation activities that were performed for the TSF-26 and TSF-06, Area B, sites during calendar year 2000 to aid in further remediation and to compile all project information regarding the sampling and remediation into a single source.

1.2 Background

The Idaho National Engineering and Environmental Laboratory (INEEL) is a government-owned, contractor-operated facility managed by the Department of Energy Idaho Operations Office (DOE-ID). Facilities at the INEEL are primarily dedicated to nuclear research, development, and waste management. Surrounding areas are for multipurpose use and are managed by the U.S. Bureau of Land Management. Located 51 km (32 mi) west of Idaho Falls, Idaho, the INEEL occupies 2,305 km² (890 mi²) of the northeastern portion of the Eastern Snake River Plain, which is a relatively flat, semiarid desert. Drainage within and around the plain recharges the Snake River Plain Aquifer, which flows beneath the INEEL and surrounding areas and is overlain by lava flows and sediment. The top of the aquifer slopes from about 200 feet below the surface at Test Area North (TAN) to about 600 feet below the surface at the Radioactive Waste Management Complex (RWMC).

Test Area North is located at the northern end of the INEEL, as shown in Figure 1-1, and was originally built between 1954 and 1961 to support the Aircraft Nuclear Propulsion Program sponsored by the United States Air Force and the Atomic Energy Commission. The program's objectives were to develop and test designs for nuclear-powered aircraft engines. Upon termination of this research in 1961, the area's facilities were converted to support a variety of other Department of Energy research projects.

From 1962 through the 1970s, TAN supported reactor safety testing and behavior studies at the Loss-of-Fluid Test Facility. Beginning in 1980, TAN was used to conduct work with material from the 1979 Three Mile Island reactor accident. Current activities include the manufacture of armor for military vehicles at the Specific Manufacturing Capability Facility and nuclear fuel storage operations at the Technical Support Facility (TSF). Other facilities at TAN that supported Department of Energy research projects were the Initial Engine Test Facility and the Water Reactor Research Test Facility (WRRTF). Figure 1-2 shows the location of the Loss-of-Fluid Test Facility, Specific Manufacturing Capability Facility, TSF, Initial Engine Test Facility, and the WRRTF.

Because of confirmed contaminant releases to the environment, the INEEL was placed on the National Priorities List of hazardous waste sites in 1989. In 1991, the Department of Energy, the Environmental Protection Agency, and the Idaho Department of Environmental Quality (IDEQ^a), hereafter referred to as the Agencies, signed the Federal Facility Agreement and Consent Order

a Formerly the Idaho Division of Environmental Quality, a division of the Idaho Department of Health and Welfare.

(DOE-ID 1991). This document outlines the cleanup process and schedule for the INEEL. To better manage cleanup activities, the INEEL was divided into 10 waste area groups (WAGs). Test Area North is designated as WAG 1.

The Federal Facility Agreement and Consent Order also established 10 operable units (OUs) within WAG 1 consisting of 94 potential release sites, as described in the OU 1-10 Record of Decision (ROD) (DOE-ID 1999). The sites include various types of pits, numerous spills, ponds, above ground and underground storage tanks, and a railroad turntable. A comprehensive remedial investigation/feasibility study (RI/FS) was initiated in 1995 to determine the nature and extent of the contamination at TAN. The Federal Facility Agreement and Consent Order defines OU 1-10 as the site of the comprehensive WAG 1 RI/FS (DOE-ID 1991). The purposes of the RI/FS were to assess the investigations previously conducted

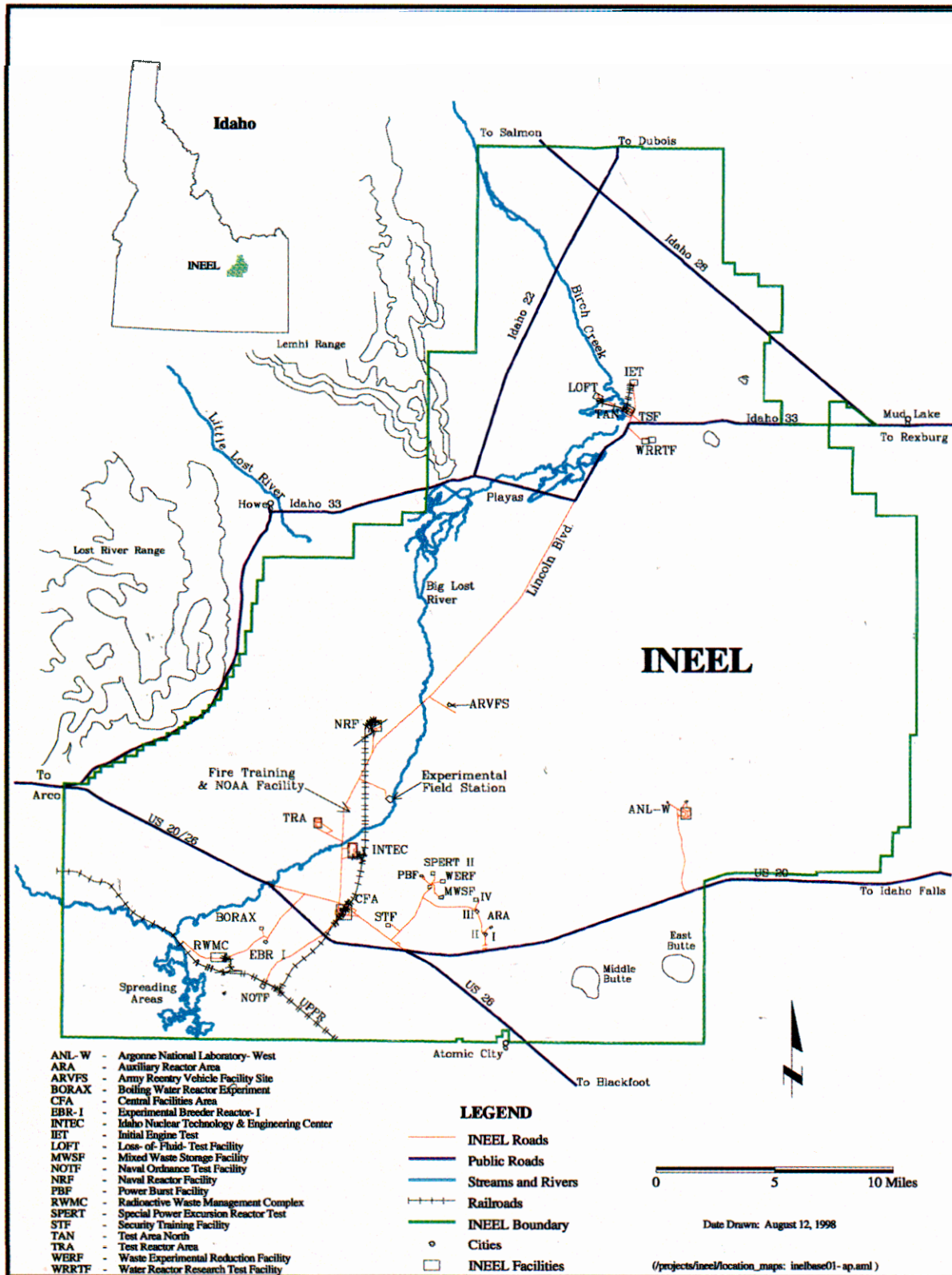


Figure 1-1. Location of Test Area North within the Idaho National Engineering and Environmental Laboratory.

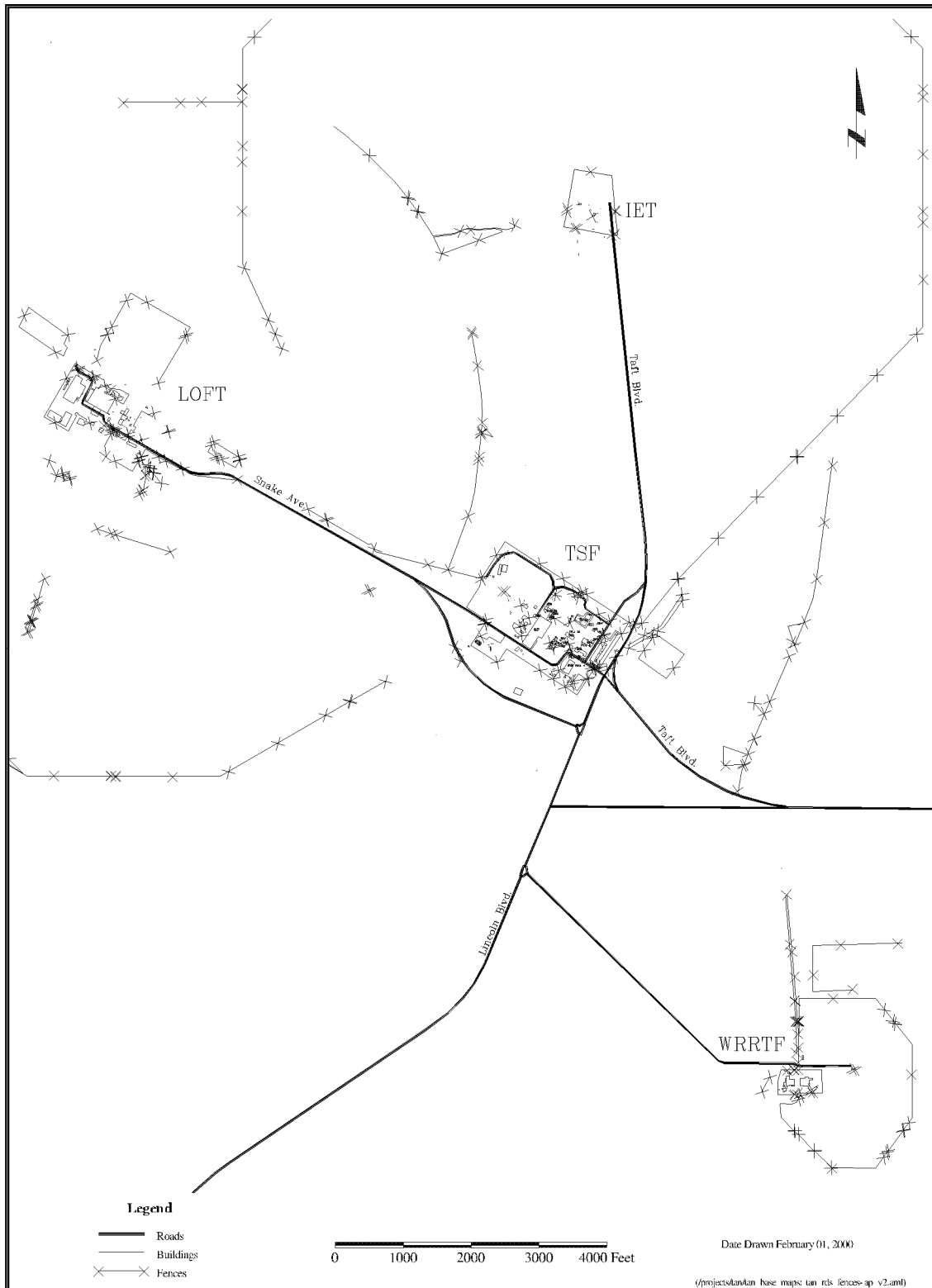


Figure 1-2. Test Area North facilities.

for WAG 1, thoroughly investigate the sites not previously evaluated, and determine the overall risk posed by the WAG 1, OU 1-10 area. The comprehensive WAG 1 RI/FS, or the OU 1-10 RI/FS, culminated with the OU 1-10 ROD. Of the 94 sites evaluated in the OU 1-10 RI/FS, the ROD provides information to support remedial actions for eight sites where contamination presents an unacceptable risk to human health and the environment. The remaining sites are either covered by another decision document, were documented as “No Action” or “No Further Action” sites in the OU 1-10 ROD, or will be further evaluated by another WAG at the INEEL. The selected remedies for the eight sites requiring remedial action, as identified in the OU 1-10 ROD, are specific to each site.

The selected remedy provided in the OU 1-10 ROD for the TSF-26 (also known as the PM-2A Tanks) surface soils (defined as 0 to 10 ft) and the TSF-06, Area B (also known as the Soil Contamination Area south of the turntable) soil is “Excavation and Disposal.” The soil final remediation goal established in the OU 1-10 ROD for these two sites is 23.3 pCi/g for Cs-137.

1.3 Technical Support Facility-26

Technical Support Facility-26, also known as the PM-2A Tanks, consists of the contaminated surface soil surrounding two abandoned underground storage tanks. Installed in the mid-1950s, the tanks stored concentrated low-level radioactive waste from the TAN-616 evaporator from 1955 to 1972 (DOE-ID 1997). In 1972, a new evaporator system (the PM-2A System) was installed in the TSF-26 area to replace the existing TAN-616 evaporator system, which was failing. The PM-2A Tanks served as feed tanks for the new evaporator system, in which liquid waste was evaporated, condensed, passed through an ion-exchange column, and discharged as clean water into the TSF-07 Disposal Pond. Because of operational difficulties and spillage, the system was shut down in 1975 (DOE-ID 1997).

During the 1981 and 1982 decontamination and decommissioning of the PM-2A system, most of the liquids in the PM-2A Tanks was pumped out into concrete containers, mixed with cement, and shipped to the RWMC for burial. The residual liquid was absorbed by material incorporated into the tanks to absorb free liquid (DOE-ID 1997).

The soil above the tanks was contaminated by spills containing radionuclides and hazardous constituents, including Cs-137, when waste was transferred from the tanks. Contaminants in the soil at the PM-2A Tanks were suspected to include metals, (barium, cadmium, chromium, lead, mercury, and silver), volatile organic compounds (VOCs) including trichloroethene, and semivolatile organic compounds (SVOCs), including polychlorinated biphenyls (PCBs) and radionuclides (Cs-137, Co-60, and Sr-90).

Contaminated soil was removed from the TSF-26 in 1996 as part of the OU 10-06 removal action (DOE/ID 1996). During this removal action, what appeared to be the top of a wooden box was discovered at the PM-2A Tanks. Because the contents of the box were unknown, it was neither sampled nor removed during the OU 10-06 removal action (DOE/ID 1996). No process knowledge or reports from the operation of the PM-2A evaporator provided any information about the wooden box.

Three soil stockpiles remained at the PM-2A Tanks after the OU 10-06 removal action (DOE/ID 1996) because gamma radiation readings from the stockpiles were greater than allowed by the project work control documentation at the time. Sampling, following the removal action, indicated that an area of 30.5 m (100 ft) by 21.3 m (70 ft) to 5.2 m (17 ft) below ground surface was contaminated with Cs-137 that could pose an unacceptable risk to human health and the environment (DOE-ID 1999).

1.4 Technical Support Facility-06, Part B

The Soil Contamination Area south of the (railroad) turntable, TSF-06, Area B, is an open soil area bounded by the TSF fence on the west, and facility roads on the east, and several adjacent structures on the south. This area is roughly triangular, and measures approximately 205.8-m (675-ft) wide on the south by 129.6-m (425-ft) wide on the west (DOE-ID 1997).

Wind-blown radioactive particles from the contaminated soil at the PM-2A Tanks (TSF-26) (located south of the TSF-06, Area B) radioactively contaminated surface soil at the TSF-06, Area B, site. Following the OU 10-06 removal action (DOE/ID 1996), Cs-137 contamination remains in a 30.5 by 52-m (100 by 500 ft) area. (Note: Operable Unit 10-06 performed the removal action at the TSF-06, Area B, in 1995, and at the PM-2A Tanks in 1996 (DOE/ID 1996).) The remaining contamination at the TSF-06, Area B, from the OU 10-06 removal action (DOE/ID 1996) is the only area of the TSF-06 that requires remedial action.

The contaminant of concern for the TSF-06, Area B site, based on residential screening results in the OU 1-10 WAG 1 RI/FS, is Cs-137. In addition, while thought unlikely, the possibility exists that other non-radionuclide contaminants associated with the PM-2A Tanks may have migrated to the TSF-06, Area B, site.

Figure 1-3 shows the location of the PM-2A Tanks (TSF-26) and the remaining contamination at the Soil Contamination Area south of the turntable (TSF-06, Area B). In addition, the figure shows the area of contamination that was established in the OU 1-10 WAG 1 RI/FS work plan.

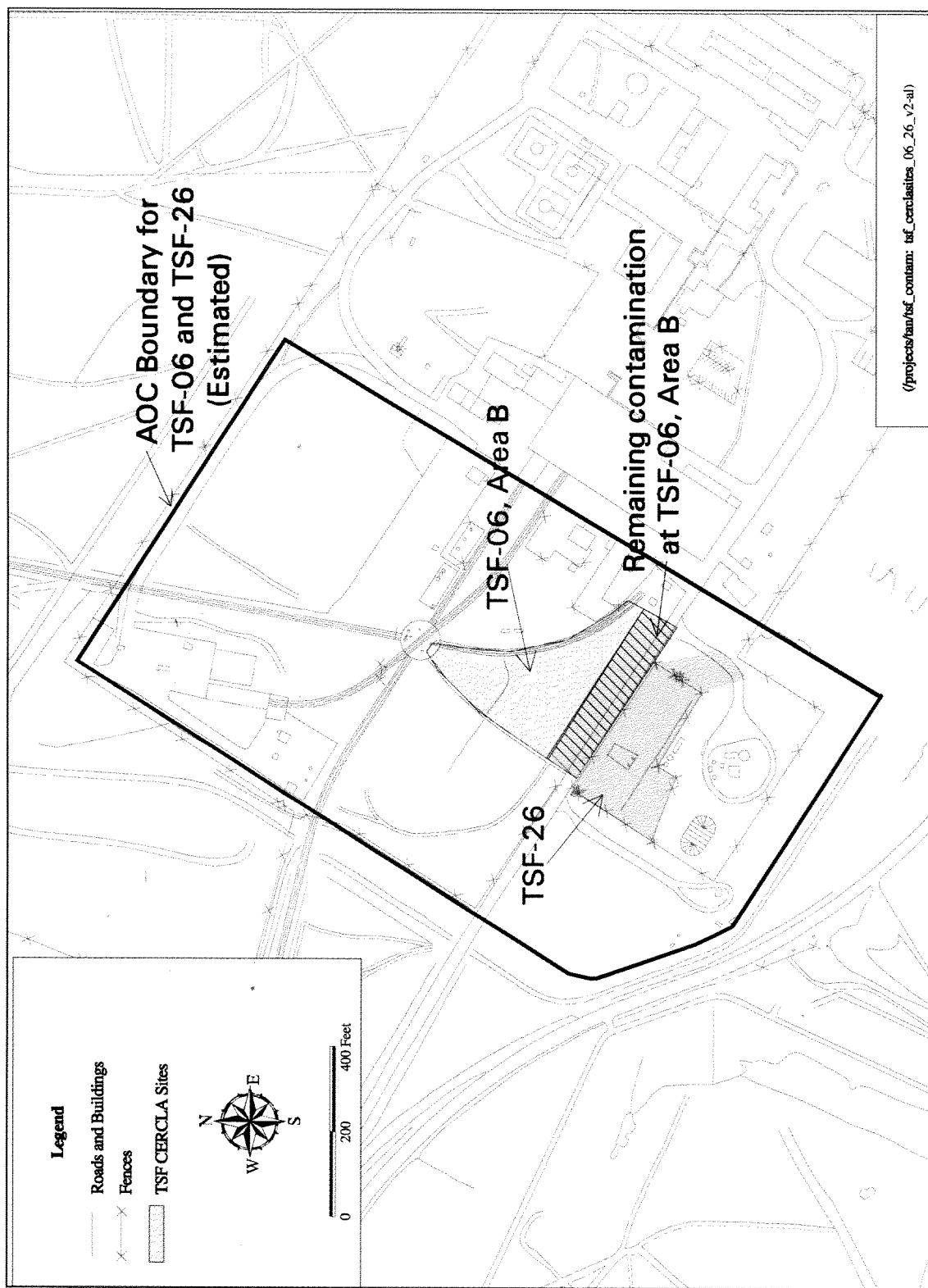


Figure 1-3. Delineation of Technical Support Facility-06, Area B, and Technical Support Facility-26 sites for calendar year 2000 sampling and remediation and the area of contamination.

1.5 Report Organization

The organization of the remainder of this report is as follows:

- Section 2—Provides a summary of existing documentation for the project stored in the INEEL Environmental Restoration Optical Imaging System (EROIS).
- Section 3—Provides a summary of the soil sampling activities at and results obtained from the TSF-26 site during calendar year 2000.
- Section 4—Provides a summary of the soil sampling and remediation activities performed at the TSF-06, Area B, site during calendar year 2000.
- Section 5—Provides a summary of additional soil sampling performed at the TSF-26 site during calendar year 2000.
- Section 6— Provides a synopsis of soil sampling and remediation performed at the TSF-06, Area B, during calendar year 2000.
- Section 7—Provides a synopsis of calendar year 2000 sampling and remediation project completion and decontamination of the backhoe used in remediation activities.
- Section 8—Provides a list of reference material used in this report.
- Appendix A: A tabulation of the analytical results from soil sampling performed at the TSF-06, Area B, and the TSF-26 sites during calendar year 2000.
- Appendix B: Photographs of the activities conducted to support the calendar year 2000 sampling and remediation for the TSF-06, Area B, and the TSF-26.
- Appendix C: Figures generated from conducting radiological field surveys at the TSF-06, Area B, and the TSF-26 sites during calendar year 2000.
- Appendix D: Radionuclide results from field screening and soil sample collection and analysis performed at the TSF-06, Area B, and the TSF-26 during calendar year 2000.
- Appendix E: Additional information that supports field operations performed during the calendar year 2000 sampling and remediation of the TSF-06, Area B, and the TSF-26.
- Appendix F: Topographic maps of areas that required further excavation to meet final remediation goals based upon the results of sampling data obtained from the TSF-06, Area B, during calendar year 2000.

2. EXISTING DOCUMENTATION

Significant documentation providing information related to the calendar year 2000 sampling and remediation at the TSF-06, Area B, and TSF-26 already exists in the project files in the EROIS. Table 2-1 provides a listing of the material in the EROIS that is relevant to the calendar year 2000 sampling and remediation performed at the TSF-06, Area B, and TSF-26 sites. The document identification number provided in the table is likely the easiest way to retrieve one of these documents from the system. The documents provided in this table, in conjunction with this document and the referenced documents provided in Section 8, provide a complete history of the calendar year 2000 sampling and remediation that was performed for the TSF-26 and TSF-06, Area B, sites.

Table 2-1. Documents in the Environmental Restoration Optical Imaging System associated with the Technical Support Facility-06, Area B, and the Technical Support Facility-26 sampling and remediation for calendar year 2000.

Date	Document Identification Number	Revision	Title
11-MAY-01	22249	00	Internal Transmittal - Transmittal of STD-101 Work Order Control Package for OU 1-10 TSF-26 PM-2A Tanks Sampling
19-APR-01	22235	00	Internal Transmittal of Two (2) INEEL STD-101 Work Control Packages for OU 1-10 - Field Projects for Inclusion in OU 1-10 Project File
22-MAR-01	SLR-01-01	00	National Emission Standards for Hazardous Air Pollutants (NESHAPS) - Emission Estimates from WAG-1 TSF-06 TSF-26 for CY-2000
12-OCT-00	ER-91-00	00	ER Operations Field Team Leader's Daily Logbook - October 18, 2000 - November 27, 2000 (10/18/2000 - 11/27/2000) TAN TSF-06
13-SEP-00	CFA-2000-004	00	Engineering Design File (EDF) – WAG-1 OU 1-10 Characterization of Radioactive Contaminated Soil Stockpiles TSF-26 & TSF-06 at TAN - Functional File #1000-148
07-SEP-00	21308	00	Response to Request for Clarification for Overburden Soil Contamination at OU 1-10 TSF-06
24-AUG-00	RHG-137-00	00	Overburden Soil Contamination at OU 1-10 TSF-06
21-AUG-00	EM-ER-161	00	Disposal of WAG-1 TSF-06 & TSF-26 Soils at RWMC
16-AUG-00	22254	00	RE: July 20, 2000 (07/20/2000) Request for A No Longer Contained In (NLCI) Determination (NLCID) for Soil Contained in Three (3) Stockpiles & One (1) Wooden Box at OU 1-10 PM-2A Tank Site at TAN INEEL - EPA ID #ID4890008952
20-JUL-00	RHG-103-00	00	Request for A No Longer Contained In (NLCI) Determination (NLCID) for Soil at OU 1-10 PM-2A Tanks CERCLA Site
13-JUL-00	EM-ER-111	00	Transmittal of Data for PM-2A Soil Stockpile & WRRTF-13 at WAG-1 OU 1-10
15-JUN-00	ER-57-00	00	Environmental Operations (EO) Sample Logbook - JUNE 15, 2000 – August 14, 2000 (06/15/2000 - 08/14/2000) - WAG-1 Post Record of Decision (ROD) Sampling

Table 2-1. (continued).

Date	Document Identification Number	Revision	Title
09-JUN-00	FLS-373-00	00	Transmittal of Data for PM-2A Soil Stockpiles & WRRTF-13 Sampling at WAG-1 OU 1-10
07-JUN-00	LLK-211-00	00	Result Tables for Post ROD Monitoring WAG-1 OU 1-10 Sampling Project
30-MAY-00	DNT-039-00	00	Resubmitted L&V Report Pertaining to Inorganic & Miscellaneous Classical Analyses (I&MCA) of Samples collected in Support of Post Record of Decision (ROD) & Field Screening of Selected Sites at WAG-1 OU 1-10 Project - SDG #1RD04601TI
23-MAY-00	ER-DAR-2155	00	Change Document Action Request (DAR) - Health & Safety Plan (HSP) for WAG-1 Post Record of Decision (ROD) Sampling
16-MAY-00	DNT-036-00	00	L&V Report Pertaining to Inorganic And Miscellaneous Classical Analyses (I&MCA) of Samples Collected in Support of Post Record of Decision (ROD) and Field Screening of Selected Sites at WAG-1 OU 1-10 Project, SDG #1RD04601LA
16-MAY-00	TWM-032-00	00	L&V Report Pertaining to PCB Organic Analysis Data in Support of Post ROD WAG-1 OU 1-10 Project, SDG #1RD04601CV
16-MAY-00	TWM-033-00	00	L&V Report Pertaining to Semi-Volatile Organic Analysis Data in Support of Post ROD WAG-1 OU 1-10 Project, SDG #1RD04601CV
16-MAY-00	TWM-034-00	00	L&V Report Pertaining to Volatile Organic Analysis Data in Support of Post ROD WAG-1 OU 1-10 Project, SDG #1RD04601CV
15-MAY-00	DNT-033-00	00	L&V Report Pertaining to Inorganic And Miscellaneous Classical Analyses (I&MCA) of Samples collected in Support of Post ROD Decision (ROD) and Field Screening of Selected Sites at WAG-1 OU 1-10 Project, SDG #1RD01901TI
04-MAY-00	JDJ-15-2000	00	L&V Report for Post Record of Decision (ROD) WAG-1 OU 1-10 - SDG #1RD01901
04-MAY-00	JDJ-16-2000	00	L&V Report for Post Record of Decision (ROD) WAG-1 OU 1-10 - SDG #1RD01901
04-MAY-00	JDJ-17-2000	00	L&V Report for Post Record of Decision (ROD) WAG-1 OU 1-10 - SDG #1RD01901
03-MAY-00	DNT-030-00	00	L&V Report Pertaining to Inorganic & Miscellaneous Classical Analyses (I&MCA) of Samples collected in Support of Post Record of Decision (ROD) & Field Screening of Selected Sites - WAG-1 OU 1-10 Project SDG #1RD01901LA
01-MAY-00	ER-DAR-2133	00	Change Document Action Request (DAR) - Health & Safety Plan (HSP) for WAG-1 Post Record of Decision (ROD) Sampling
01-MAY-00	INEEL/EXT-2000-0255	00	Preliminary Hazard Assessment of OU 1-10 Remedial Action (RA) SITES: TSF-26 Soils, TSF-03 & WRRTF-01

Table 2-1. (continued).

Date	Document Identification Number	Revision	Title
27-APR-00	WO-27761	00	Work Order Package #27761 - Safe Work Permit – WCF-15709 Containerize Soil Pile from TSF-26 PM-2A Area & TSF-06 & Shipment of Soils to RWMC for Disposal
05-APR-00	WO-25604	00	Work Order Package #25604 - TSF-26 Sampling
31-MAR-00	ER-DAR-2103	00	Permanent Change Document Action Request (DAR) - Field Sampling Plan (FSP) for Post Record of Decision (ROD) Sampling & Field Screening of Selected Sites at WAG-1 OU 1-10
21-MAR-00	ER-DAR-2093	00	Permanent Change Document Action Request (DAR) - Field Sampling Plan (FSP) for Post Record of Decision (ROD) Sampling & Field Screening of Selected Sites at WAG-1 OU 1-10
10-MAR-00	DMF-06-00	00	Delivery of Revision 3.0 (REV.03) of Sampling & Analysis Plan (SAP) Table & Labels for Field Sampling for Post ROD & Field Screening of Selected Sites at WAG-1 OU 1-10 Project
28-FEB-00	ER-11-00	00	Environmental Operations (EO) Sample Logbook - WAG-1 Post Record of Decision (ROD) Sampling - February 28, 2000 - June 7, 2000 (02/28/2000 - 06/07/2000)
23-FEB-00	ER-10-00	00	ER Operations Field Team Leader's Daily Logbook - February 23, 2000 - October 10, 2000 (02/23/2000 - 10/10/2000) - WAG-1 Post Record of Decision (ROD) Sampling
23-FEB-00	ER-SOW-361	00	BBWI INEEL SMO Statement of Work (SOW) - Organic Analyses for Samples collected for Post Record of Decision (ROD) Sampling and Field Screening of Selected Sites at WAG-1, OU 1-10 Project
23-FEB-00	ER-SOW-362	00	BBWI INEEL SMO Statement of Work (SOW) - Inorganic & Miscellaneous Classical Analyses (I&MCA) of Samples collected in Support of Post Record of Decision (ROD) Sampling & Field Screening of Selected Sites at WAG-1, OU 1-10 Project
17-FEB-00	18935	00	Change in Scope to TAN-99-008 – TAN, OU 1-10 WAG-1
16-FEB-00	EM-ER-23	00	Transmittal of Final Field Sampling Plan (FSP) for Post Record of Decision (ROD) Sampling and Field Screening of Selected Sites at WAG-1, OU 1-10
14-FEB-00	INEEL/EXT-2000-00035	00	Preliminary Hazard Assessment of OU 1-10 Remedial Action Sites TSF-06, AREA B, TSF-07 and WRRTF-13
10-FEB-00	22186	00	Approval of Environmental Checklist (EC) – TAN, WAG-1, OU 1-10 - Project #TAN-99-008
10-FEB-00	TAN-99-008EC	00	NEPA Approval Form & Environmental Checklist (EC) TAN-99-008 – TAN, WAG-1, OU 1-10 Remedial Action
01-FEB-00	27713	00	Review Approval of TAN-99-008 Environmental Checklist (EC) – TAN, WAG-1, OU 1-10
01-FEB-00	DOE/ID-10710	00	Field Sampling Plan (FSP) for Post Record of Decision (ROD) Sampling & Field Screening of Selected Sites at WAG-1, OU 1-10

Table 2-1. (continued).

Date	Document Identification Number	Revision	Title
01-FEB-00	INEEL/EXT-99-010 45	01	Health & Safety Plan (HSP) for WAG-1 Post Record of Decision (ROD) Sampling
18-JAN-00	OPE-ER-09-00	00	14 (Fourteen) Day Notification of Sampling for OU 1-10 Post Record of Decision (ROD) Sampling at TSF-06, TSF-07, TSF-26 & WRRTF-13
13-JAN-00	RC-01-2000	00	Hazard Analysis for Post Record of Decision (ROD) Sampling Activities at OU 1-10 Sites TSF-06 TSF-07 TSF-26 WRRTF-13
10-JAN-00	FLS-23-00	00	14 (Fourteen) Day Notification of Sampling for OU 1-10 Post Record of Decision (ROD) Sampling at TSF-06, TSF-07, TSF-26 AND WRRTF-13

3. TECHNICAL SUPPORT AREA-26 CALENDAR YEAR 2000 SAMPLING SUMMARY

In March 2000, sampling of the three soil stockpiles and the wooden box at the TSF-26 was conducted to obtain additional data to support remediation, to obtain a NLCI determination for the soil, and to provide necessary concentration data to proceed with the OU 1-10 remedial action. The samples of the TSF-26 soil stockpiles and the wooden box were collected in accordance with the post-ROD field sampling plan (DOE-ID 2000). Figure 3-1 shows the location of the TSF-26 stockpiles and the wooden box prior to the calendar year 2000 sampling and remediation. The specific sampling locations within the stockpiles and the wooden box are shown on Figure 3-2, which also shows the pertinent radionuclide results from the sampling event.

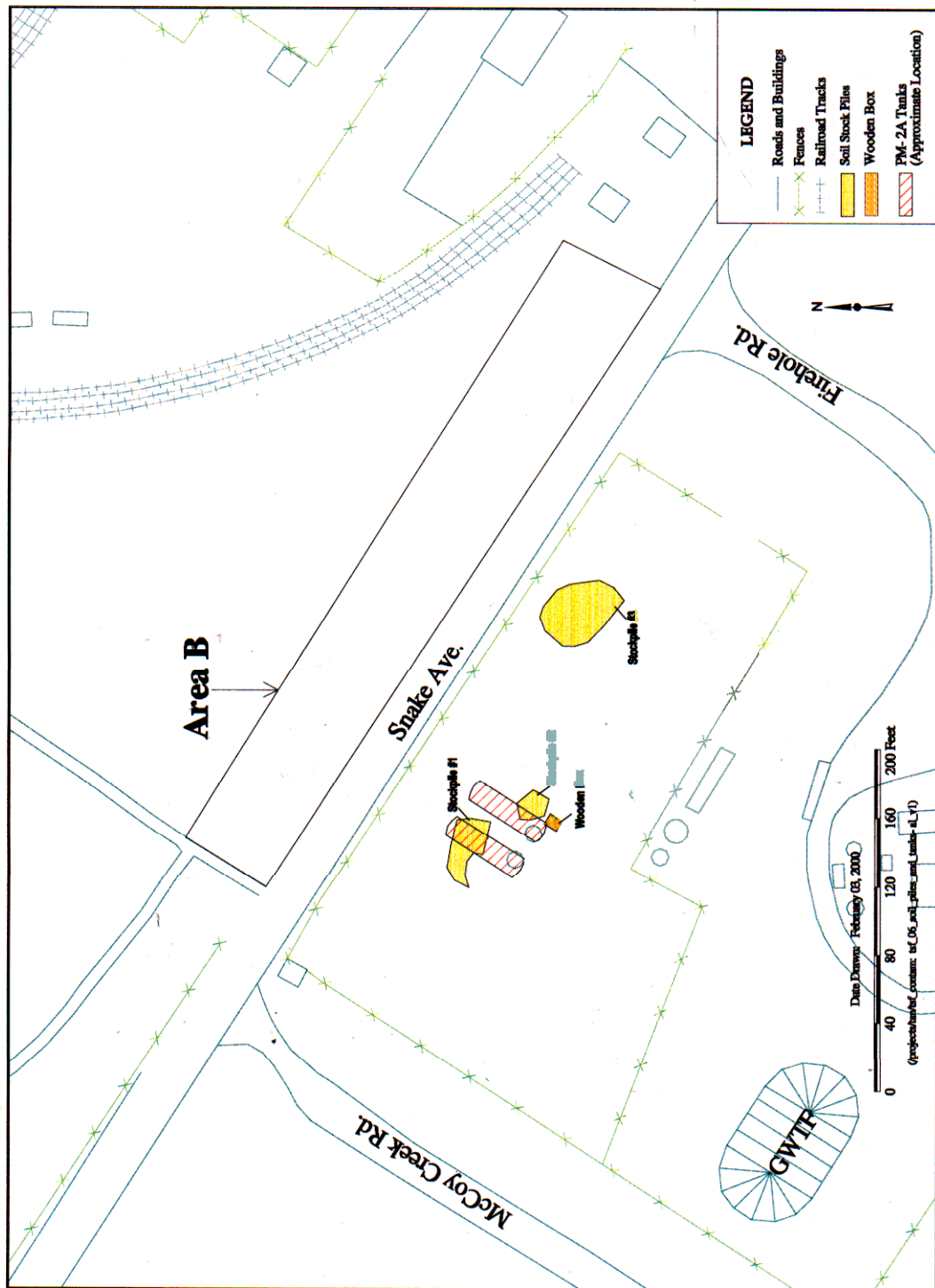
Sample collection for the soil stockpiles and the wooden box were performed on two different days in March 2000. The soil stockpile samples were all collected on March 14, 2000, and the wooden box samples were all collected March 21, 2000. Two field logbooks, the Environmental Restoration Operations Field Team Leader's Daily Log (ER-10-00) and the Environmental Operations Sample Logbook (ER-11-00), were maintained during the calendar year 2000 soil stockpile and wooden box sampling events at the TSF-26. These two field logbooks provide additional information regarding field conditions and sampling. Both logbooks are included in the INEEL EROIS and can be found by the document identification number, ER-10-00 or ER-11-00.

The sample locations for the soil stockpiles were prestaked by an INEEL surveyor in the center of each identified grid shown in Figure 3-1. Samples were collected from each stockpile from the staked location, at least 1 ft into the stockpile, to ensure that sample material that had not volatilized would be collected. Upon exit from the TSF-26 area, TAN radiological control personnel surveyed the collected samples to support sample shipment. In addition, SAM 935 equipment (manufactured by Berkeley Nucleonics, Berkeley, CA) was used to survey the collected soil stockpile samples. The SAM 935 is a sodium iodide detector capable of providing speciated gamma-emitting isotope radiation readings in a field setting.

The shape of the wooden box was different from the 2 ft wide by 8 ft long box (with an unknown depth) previously assumed in the post-ROD Field Sampling Plan (DOE-ID 2000). When the wooden box was located, its dimensions were approximately 4 ft wide by 4 ft long, with an unknown depth. To adequately characterize the wooden box, the planned grid locations were changed to the locations shown in Figure 3-2. Each sample location was hand-augered from 0 to 2 ft, 2 to 5 ft, and 5 to 7 ft when possible. The depth interval with the highest levels, based upon readings from a handheld sodium iodide frisker and SAM 935 field screening equipment, was sent for laboratory analysis. Details regarding the interval selection are provided in the Environmental Restoration Operations Field Team Leader's Daily Log (ER-10-00). Table 3-1 shows the intervals that were sent for analysis from each of the sample locations at the wooden box. The wooden box had definite sides on three sides of the box, but was lacking the fourth side, which is shown in Figure 3-2 as the assumed edge of the wooden box.

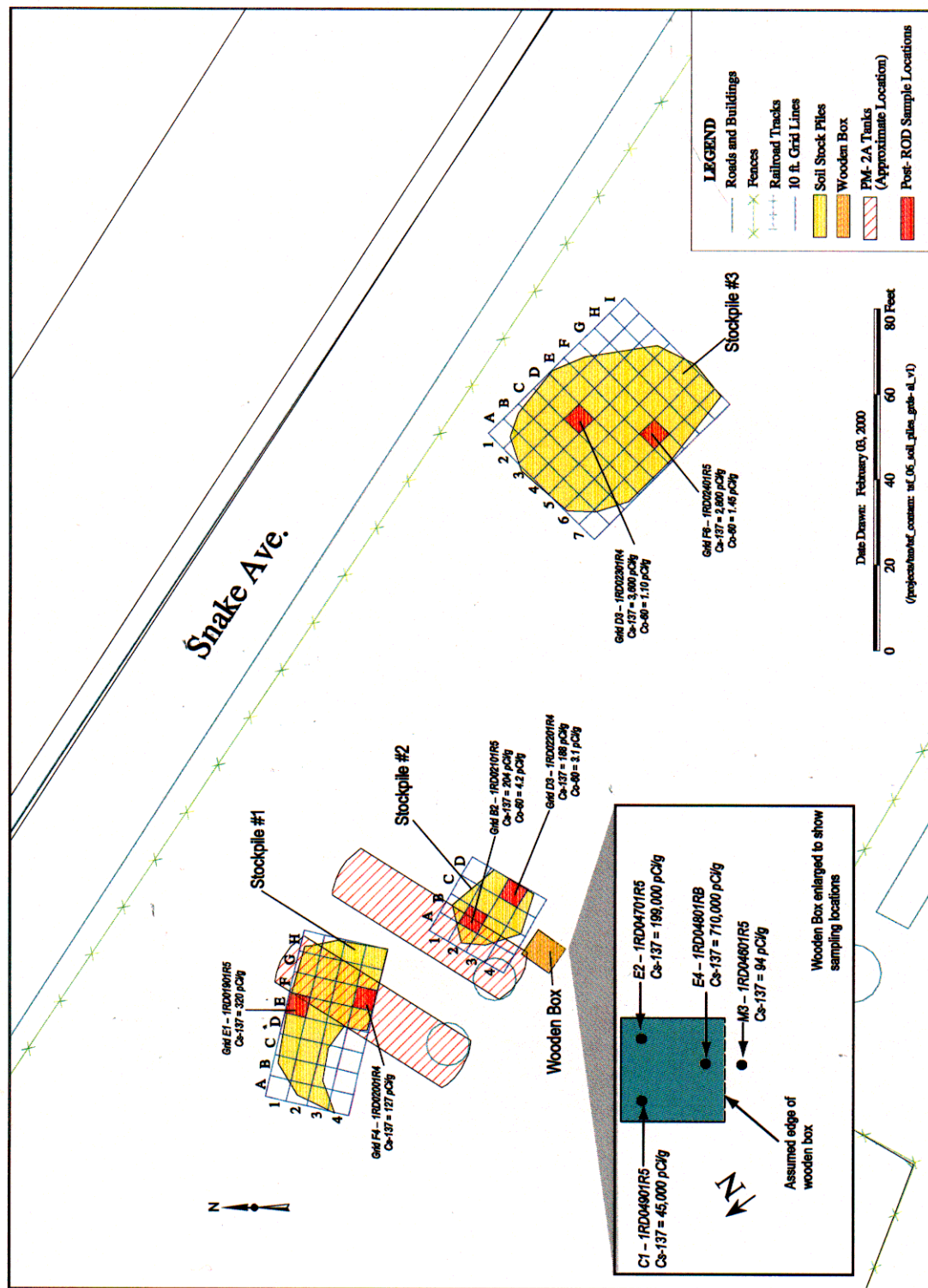
Table 3-1. Technical Support Facility-26 wooden box sample intervals sent for laboratory analysis.

Sample Identification Number	Wooden Box Sample Grid	Depth Interval Selected for Analysis (ft)
1RD4601	M3	0 - 2
1RD4701	E2	0 - 2
1RD4801	E4	0 - 2
1RD4901	C1	2 - 5



DEM/17/1688-A1 (1) Figure 1.d

Figure 3-1. Location of the Technical Support Facility-26 soil stockpiles and the wooden box prior to calendar year 2000 sampling and remediation.



DEM0714082.A1.01Figure2.d

Figure 3-2. Sample collection locations and pertinent radionuclide sample results for the Technical Support Facility-26 soil stockpile and wooden box sampling.

Samples collected from the TSF-26 soil stockpiles and the wooden box were analyzed for VOCs, semivolatile organic compounds, PCBs, total metals, toxicity characteristic leaching procedure metals and radionuclides, according to Table 4-1 in the post-ROD Field Sampling Plan (DOE-ID 2000). In addition to the planned analytes, gross alpha and gross beta results were also obtained to provide information for the planned future disposal of this soil. Semivolatile organic compounds and PCBs were not detected, and some VOCs were detected at insignificant levels (e.g., 4.6 ppb for toluene). Radionuclide results showed Cs-137 concentrations up to 3,600 pCi/g in the soil stockpiles, which was similar to the 4,400 pCi/g maximum sample results obtained during the OU 10-06 removal action (DOE/ID 1996) that was referenced in the OU 10-1 RI/FS. Radionuclide sample results for the wooden box were significantly higher than the results for the soil stockpiles; the maximum Cs-137 concentration was 710,000 pCi/g from sample location E4. The results from location M3 (assumed to be just slightly outside the wooden box) show substantially lower radionuclide concentrations than locations C1, E2, and E4. These results from location M3 appear to indicate that the wooden box did serve as some sort of containment for soil with elevated concentration levels.

Appendix A provides a tabulation of all analytical results obtained for the TSF-26 stockpiles and the wooden box.

4. TECHNICAL SUPPORT FACILITY-06, PART B, AND TECHNICAL SUPPORT FACILITY-26 CALENDAR YEAR 2000 SOIL REMEDIATION

During the March 2000 timeframe, as the soil stockpiles and the wooden box samples were collected, radiological field screening at the TSF-06, Area B, was conducted using a global positioning radiometric scanner with a high purity germanium detector mounted on a four-wheel drive vehicle. The global positioning radiometric scanner survey indicated that the overburden material at the TSF-06, Area B, north of Snake Avenue had been contaminated by windblown radioactive contamination from the TSF-26 site. Given this new information, WAG 1 management, with agreement from IDEQ and the Environmental Protection Agency, determined that it would be prudent to remove the source of contamination to prevent further windblown contamination. The source of contamination for the TSF-06, Area B, based upon the locations of elevated radiological concentrations, was clearly the soil stockpiles and the wooden box at the TSF-26. Appendix C provides the results of all truck-mounted radiological surveys performed at the TSF-06, Area B, and TSF-26 during calendar year 2000.

Following completion of the INEEL Standard (STD)-101 work control package, which can be found in the INEEL EROIS by document identification number WO-27761, field work began in early May 2000 to containerize the soil stockpiles and the wooden box material in soft-sided soil bags. Soil bags were selected as the container for the TSF-26 stockpiles and the wooden box based on past INEEL positive experience with the bags and the low cost of the bags per volume of soil.

During soil bagging activities, a front-end loader placed soil from the stockpiles into soil bags. The bags were sequentially numbered, noted with the soil pile from which they were filled, and weighed. The wooden box was excavated using a backhoe, and the soil was placed into separate soil bags for the wooden box, with the same information recorded for these bags. The information for each soil stockpile and the wooden box soil bag was recorded in the Environmental Restoration Operations Field Team Leader's Daily Log (ER-10-00). A total of 22 soil bags were filled from the TSF-26 soil stockpiles and the wooden box. Based upon the weight of each of the bags, the volume from each stockpile and the wooden box was estimated. The estimated total volume from each soil stockpile and the wooden box is shown in Table 4-1.

Table 4-1. Estimated total volume from each soil stockpile and the wooden box.

Excavated Area	Estimated Volume (yd ³)
Stockpile #1	17
Stockpile #2	6
Stockpile #3	114
Wooden Box	7
Total Excavated Volume	144

A crane stacked the filled soil bags inside the fence in the southwest portion of the TSF-26 site. It was believed they would be far enough away from where radiological field screening was to be performed so as not to interfere with the results. However, when the radiological field screening was performed in late May and early June 2000 (see Section 5), it was obvious that the soil bags were causing interference with the results. The elevated radioactivity in the area was not considered the result of wind-blown contamination from the bags but a direct result of the contaminated soil within the bags. It was decided

that the TSF-26 soil bags should be moved to a nearby Comprehensive Environmental Response, Compensation, and Liability Act storage area for interim storage prior to disposal.

In early June 2000, OU 1-10 project personnel met with the TAN facility personnel to determine an appropriate storage location that could accommodate both the soil bags from the TSF-26 and the planned soil bags from the TSF-06, Area B. A portion of the RPSSA, located north of the railroad turntable at the TSF-06 (within the Area of Contamination shown in Figure 1-3) was identified as suitable for the storage of soil bags. At the time, however, it was decided that storage of bags at TAN would be limited to approximately 6 months from the date of generation to prevent the ultraviolet light degradation of the soil bag material. Six months was chosen as a conservative storage limit, even though the integrity of the soil bag material is estimated by the manufacturer to extend substantially beyond 6 months.

In late June 2000, the soil bags inside the TSF-26 fence were lifted over the fence by crane to a flatbed truck parked outside and along the southern edge of the fence. The truck transported the soil bags to the RPSSA, where they were offloaded and stacked. The stacking configuration of the soil bags placed one soil bag onto another, but provided for inspections of each bag during storage.

In late July 2000, an NLCI determination request was submitted to the IDEQ for the containerized soil from the TSF-26 soil stockpiles and the wooden box. The NLCI determination request to the IDEQ can be found in the INEEL EROIS system by document identification number RHG-103-00. The NLCI determination request for the TSF-26 soil stockpiles and the wooden box was approved by IDEQ in mid-August 2000. The NLCI determination approval can be found in the INEEL EROIS system by document identification number 22254.

Discussions with the Environmental Protection Agency and the IDEQ during the summer of 2000 informed the Agencies that it was DOE-ID's intent to dispose of the TSF-26 and TSF-06, Area B, soil bags at the RWMC, which has appropriate Department of Energy authorization for low-level waste disposal. Numerous conversations with the Agencies resulted in a DOE-ID letter to the Agencies stating that the TSF-26 and TSF-06, Area B, soil would be disposed of at the RWMC, and that the disposal at the RWMC would be protective of human health and the environment. The DOE-ID letter to the Agencies can be found in the INEEL EROIS system by document identification number EM-ER-161.

In early September 2000, shipment of the TSF-26 and TSF-06, Area B, soil bags to the RWMC began. The shipment, a total of 97 soil bags, was completed on December 7, 2000. Implementation issues which arose during the bag shipment effort to the RWMC are as follows:

- The crane used at the RWMC for soil bag unloading required maintenance at the Central Facilities Area
- Weight limitations of the flatbed truck used for shipment allowed for only 2 soil bags to be transported at a time
- Personnel at RWMC thought available to unload soil bags had other job/time requirements that caused delays in getting the bags unloaded at the RWMC and the trucks back to TAN
- Staffing of the equipment operators and laborers used to load and drive the trucks to the RWMC was difficult because the work was not full-time.

5. TECHNICAL SUPPORT FACILITY-26 CALENDAR YEAR 2000 ADDITIONAL SAMPLING

In addition to the TSF-26 soil stockpiles and the wooden box sampling events during calendar year 2000, several other radionuclide field screening and sampling events were conducted. The purposes of these activities were to obtain information regarding the remediation and to provide information to support future remediation for the site. The additional sampling activities are described below.

5.1 April 2000 Sampling

Six hot spots in the TSF-26 area were identified using the SAM 935 equipment and samples were collected and analyzed from each. A segmented sampler was used to collect samples from four of the six hot spot locations at 1-in intervals from 0 to 6 in. For the remaining two hot spot locations, composite samples were collected from 0 to 6 in. This sampling was performed to begin establishing depth profiles for the area and to identify a location within the TSF-26 site for the storage of soil bags. The results of the sampling were presented in a report prepared by Chris Oertel, dated May 2, 2000 (see Appendix D).

5.2 May 2000 Sampling

During the TSF-26 stockpile excavation discussed in Section 4, field screening and field sampling were conducted at the base of each of the stockpiles to ensure that contaminated soil was sufficiently removed to prevent future significant windblown contamination. Field screening was performed using the DART equipment to obtain in situ gamma spectroscopy information for Cs-137. Additional grab samples were taken to understand the potential radiological interference effects from other nearby contamination areas that are substantially higher than background concentrations. The results of this field screening and sampling are provided in Appendix D, in an e-mail from Chris Oertel, dated May 24, 2000.

5.3 June 2000 Sampling

In June 2000, field screening and sample collection and analysis was performed at the TSF-26 site to obtain information to support future remediation of the area. This field screening and sampling event involved the use of three different measurement methods: gross gamma analysis using the SAM 935 equipment (a sodium iodide detector), in situ gamma spectroscopy equipment (commonly named the "DART"), and grab sampling with laboratory gamma spectroscopy. The results of this field screening and sampling event are included in Appendix D, in a report from Chris Oertel, dated June 27, 2000. The report was reissued to correct map color schemes as an e-mail attachment from Chris Oertel (see Appendix D, following e-mail dated July 6, 2000, and in the Oertel report dated June 27, 2000). It should be noted that the technical data presented in the reissued report did not change.

5.4 August 2000 Sampling

In August 2000, the final radiological sampling event for the TSF-26 was performed to obtain data results regarding the vertical nature and extent of contamination to support future remedial action. Grab samples were collected at 6-in, 12-in, and 18-in intervals throughout the TSF-26 site at grid locations with spacings of approximately 50 ft. The results of this sampling are provided in Appendix D in a report from Bart Morales dated September 11, 2000. Based upon the sampling performed, the results indicate that contamination is limited to the top 6 in of soil at the TSF-26 site.

6. TECHNICAL SUPPORT FACILITY-06, AREA B CALENDAR YEAR 2000 SAMPLING AND REMEDIATION

As a result of the March 2000 global positioning radiometric scanner survey conducted at the TSF-06, Area B, windblown contamination from the TSF-26 was known to have spread to the TSF-06, Area B. Several additional field screening and sampling/analysis events were performed during calendar year 2000 to further understand the nature and extent of the windblown contamination and to obtain analytical data to support remediation conducted at the TSF-06, Area B. These sampling and remediation activities are described below.

6.1 April 2000 Sampling

In April, in situ gamma spectroscopy using the DART equipment was performed at the TSF-06, Area B, and additional composite samples were collected at several identified locations at intervals of 0 to 6 in, 12 to 18 in, and 24 to 30 in. The data results, provided in Appendix D, in an email from Chris Oertel dated April 19, 2000, show that Cs-137 contamination existed in the overburden soil at the TSF-06, Area B, especially in areas directly across from the TSF-26 soil Stockpile #3. These results were submitted in a formal report by Chris Oertel dated May 3, 2000. In a May 11, 2000, e-mail from Chris Oertel, these results were replotted using actual sample coordinates. Each of the three submittals are provided in Appendix D. The technical data did not change in the reports, but project personnel comments were incorporated to assist with report comprehension.

6.2 July 2000 Remediation

Using the results from the April 2000 sampling, remediation of the TSF-06, Area B, site was performed in July 2000 to remove the top 6 in of overburden from the site. The contaminated soil was bladed with a road grader, then loaded into soil bags with the use of a front end loader. During the July 2000 remediation, 30 soil bags were initially filled and stacked on the northeast side of the TSF-06, Area B, site prior to transport to the RPSSA. Starting in mid-July, the soil bags were transported to the RPSSA for interim storage before disposal. During the blading of the top 6 in of soil, asphalt was encountered along the northern side of the TSF-06, Area B, site from an old road that had deteriorated. The asphalt was commingled with the contaminated soil, but guidance from INEEL Environmental Affairs personnel directed field personnel to ensure that soil bags were not filled with more than 50% asphalt.

At the end of July 2000, upon completion of the initial 30-bag removal, field screening and sampling was performed to support further remediation. Twenty-four field screening and sampling locations were identified. Field screening was performed using the SAM 935 and DART equipment to obtain in situ gamma spectroscopy results. Samples were also collected and analyzed. No report was generated from this sampling event, but the results were recorded in the Environmental Restoration Operations Field Team Leader's Daily Log (ER-10-00). These results led to the filling of an additional 17 soil bags. These bags were temporarily stored at the TSF-06, Area B, site for a few days before being moved to the RPSSA for interim storage. After these 17 soil bags had been moved to the RPSSA, soil bag filling operations resumed. Another 14 soil bags were filled with contaminated soil that exceeded the Cs-137 final remediation guide.

6.3 Early August 2000 Remediation

At the end of July 2000 and into early August 2000, remaining soil that had been in piles was windrowed with the road grader. Field screening and sampling and analysis was performed on these windrows to determine which were contaminated at levels above the Cs-137 final remediation guide of

23.3 pCi/g. The results of the windrow data are provided in Appendix D in a report from Chris Oertel dated August 3, 2000. The results show the two northern windrows were contaminated at levels higher than the Cs-137 final remediation guide. The final 14 soil bags from the TSF-06, Area B, site were filled with this windrowed soil. These soil bags were subsequently moved to the RPSSSA for interim storage. No further remediation was performed for the TSF-06, Area B, site during calendar year 2000.

6.4 August 2000 Sampling

In early August 2000, a sampling effort was completed to obtain information for future remediation of the TSF-06, Area B, site. To provide this information, 64 sample locations were established along a grid system that was surveyed by the INEEL survey crews. At each location, soil samples were collected with a hand auger in composite 6-in intervals. Sample intervals at each location were from 0 to 6 in, 6 to 12 in, and 12 to 18 in. In addition to the actual soil collected for analysis at each sample interval, the DART equipment was also used at the same locations. The results of the sampling, provided in a report from Bart Morales dated August 29, 2000 (Appendix D), were used to develop the excavation maps provided in Appendix F. Budget constraints stopped the excavation that, based upon these sample results, had been planned to begin in September 2000.

6.5 Soil Bag Disposal

In late August 2000, a NLCI determination request was submitted to IDEQ for the containerized soil and debris (asphalt) in 75 soil bags from the TSF-06, Area B, site. The excavated volume was estimated to be 555 yd³. The NLCI determination request was based upon analytical data obtained for the TSF-26 stockpiles and the wooden box, which was the source of windblown contamination to the TSF-06, Area B, site. The NLCI determination request can be found in the INEEL EROIS system by document identification number RHG-137-00. The NLCI determination request for the TSF-06, Area B, site was approved by IDEQ in early September 2000. This NLCI determination approval can be found in the INEEL EROIS system by document identification number 21308.

The 75 soil bags that were filled at the TSF-06, Area B, were shipped to the RWMC for disposal during the same time frame as the bags from the TSF-26 (see Section 4).

7. CALENDAR YEAR 2000 REMEDIATION COMPLETION

Towards the end of the calendar year 2000 remediation performed for the TSF-06, Area B, and the TSF-26, two additional activities were completed to finish work associated with these two sites: (1) the TSF-06, Area B, winterization, and (2) decontamination of the backhoe used in the remediation at the TSF-26 site. The term “winterization” is used to summarize activities to prepare the site for winter.

When remediation at the TSF-06, Area B, was completed in calendar year 2000, there was a drop-off along the north edge of Snake Avenue created by the soil removal. This drop-off posed a safety hazard to traffic that used Snake Avenue. In addition, analytical results from the final sampling performed at the TSF-06, Area B, showed elevated levels of Cs-137, which could have been an exposure potential for TAN workers who walked by the site along Snake Avenue. To mitigate these hazards, a thin layer of clean soil was placed at the TSF-06, Area B, along the north edge of Snake Avenue in December 2000.

The STD-101 work control package that was used for the winterization was different from the STD-101 work control package that was used for other remediation activities. The STD-101 work control package is not contained in the INEEL EROIS, nor does the EROIS have other information related to the TSF-06, Area B, winterization; however, photographs provided in Appendix B show the winterization activities that were performed at the site. The TSF-06, Area B, winterization was also not documented in the Environmental Restoration Operations Field Team Leader’s Daily Log. It is recommended that the TSF-06, Area B, winterization STD-101 work control package be located and entered in the EROIS.

As sampling and remediation were performed at the TSF-06, Area B, and TSF-26 sites, equipment was decontaminated for future reuse. However, the backhoe that had been used became contaminated to the extent that it could not be easily decontaminated. In January 2001, the backhoe was moved into an area established at TAN-607, the necessary parts were disassembled and decontaminated, and the backhoe was reassembled. This decontamination was not documented in the Environmental Restoration Operations Field Team Leader’s Daily Log. The work control package is not contained in the INEEL EROIS, nor does the EROIS have other information related to the backhoe decontamination.

8. REFERENCES

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- ER-11-00, 2000, "Environmental Operations Sample Logbook, WAG 1 Post ROD Sampling," February 28, 2000 to June 7, 2000, Idaho National Engineering and Environmental Laboratory, Environmental Restoration Program.

Appendix A

TSF-26 Stockpile and Wooden Box Analytical Data from Calendar Year 2000 Sampling

Appendix A

TSF-26 Stockpile and Wooden Box Analytical Data from Calendar Year 2000 Sampling

This appendix provides a summary of the analytical results from the TSF-26 stockpiles and wooden box, which were analyzed during calendar year 2000. The results of the analytical data were used to develop waste profiles for the waste to be shipped and disposed at the Radioactive Waste Management Complex, and were also used to obtain a no-longer contained-in determination of this waste volume from the State of Idaho Department of Environmental Quality.

The analytical data for the TSF-26 stockpiles and wooden box are provided in Table A-1.

Table A-1. TSF-26 Stockpile and Wooden Box Sample Results

TSF-26 Stockpile and Wooden Box Sample Numbers, Sample Locations, and Corresponding Sample Results													
VOCs (units ug/kg)	IRD019	IRD020	IRD021	IRD022	IRD023	IRD02401	IRD02402	IRD046	IRD047	IRD048	IRD04901	IRD04902	
	Stockpile #1, Grid E1	Stockpile #1, Grid F4	Stockpile #2, Grid B2	Stockpile #2, Grid D3	Stockpile #2, Grid D3	Stockpile #3, Grid F6	Stockpile #3, Grid F6	Wooden Box, Grid M3	Wooden Box, Grid E2	Wooden Box, Grid E4	Wooden Box, Grid C1	Wooden Box, Grid C1	
Chloromethane	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Vinyl chloride	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Bromomethane	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Chloroethane	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Acetone	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	23.7	16.2 (B)	18.3 (B)	11.4 (U)	15.9 (B)	
1,1-dichloroethene	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Methylene chloride	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Carbon disulfide	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Trans-1,2-dichloroethene	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Chloroform	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
1,1,1-trichloroethane	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Carbon tetrachloride	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
1,2-dichloroethane	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Benzene	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Trichloroethene	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
1,2-dichloropropane	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Bromodichloromethane	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
4-methyl-2-pentanone	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
cis-1,3-dichloropropene	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Toluene	10.5 (U)	11.5 (U)	1.7 (U)	11.2 (U)	3.2 (U)	1.5 (U)	1.1 (U)	10.7 (U)	2.8 (U)	4 (U)	3.4 (U)	4.6	
Trans-1,3-dichloropropene	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
2-hexanone	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
1,1,2-trichloroethane	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Tetrachloroethane	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Dibromochloromethane	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Chlorobenzene	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Ethylbenzene	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
m,p-xylenes	1.3 (U)	1.2	2.1 (U)	1.8 (U)	2.8 (U)	2.0 (U)	1.7 (U)	10.7 (U)	15.3	17.1	9.9 (U)	27.1	
o-xylene	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	3.6 (U)	4.5	2.7 (U)	5 (U)	
Styrene	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
Bromoform	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	
1,1,2,2-tetrachloroethane	10.5 (U)	11.5 (U)	11.4 (U)	11.2 (U)	11.8 (U)	11.2 (U)	11.3 (U)	10.7 (U)	11.4 (U)	10.9 (U)	11.4 (U)	11.7 (U)	

Table A-1. (continued).

TSF-26 Stockpile and Wooden Box Sample Numbers, Sample Locations, and Corresponding Sample Results												
Stockpile #1, Grid E1	IRD020 Grid F4	IRD021 Grid B2	IRD022 Grid D3	Stockpile #2, Grid D3	IRD023 Grid D3	IRD024 Grid F6	Stockpile #3, Grid F6	IRD046 Box, Grid M3	Wooden Box, Grid E2	IRD048 Wooden Box, Grid E4	IRD04901 Wooden Box, Grid C1	IRD04902 Wooden Box, Grid C1
SVOCs (units ug/kg)												
Phenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
bis(2-chloroethyl) ether	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2-Chlorophenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
1,3-Dichlorobenzene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
1,4-Dichlorobenzene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
1,2-Dichlorobenzene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2-Methylphenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2,2'-oxybis(1-chloropropane)	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
4-Methylphenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
N-Nitrosodimethylamine	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
Hexachloroethane	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
Nitrobenzene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
Isophorone	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2,4-Dimethylphenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2-Nitrophenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
Bis(2-chloroethoxy)methane	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2,4-Dichlorophenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
1,2,4-Trichlorobenzene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
Naphthalene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
4-Chloroaniline	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
Hexachlorobutadiene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
4-Chloro-3-Methylphenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2-Methylnaphthalene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
Hexachlorocyclopentadiene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2,4,6-Trichlorophenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2,4,5-Trichlorophenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2-Chloronaphthalene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2-Nitroaniline	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
Dimethylphthalate	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2,6-Dinitrotoluene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
Acenaphthylene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
3-Nitroaniline	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
Acenaphthene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
2,4-Dinitrophenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)
4-Nitrophenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	---	370 (U)

Table A-1. (continued).

TSF-26 Stockpile and Wooden Box Sample Numbers, Sample Locations, and Corresponding Sample Results													
SVOCs (units ug/kg)	IRD019	IRD20	IRD21	IRD22	IRD23	IRD2401	IRD2402	IRD246	IRD247	IRD248	IRD24901	IRD24901RE	IRD24902
	Stockpile #1, Grid E1	Stockpile #1, Grid F4	Stockpile #2, Grid B2	Stockpile #2, Grid D3	Stockpile #2, Grid D3	Stockpile #3, Grid F6	Stockpile #3, Grid F6	Wooden Box, Grid M3	Wooden Box, Grid E2	Wooden Box, Grid E4	Wooden Box, Grid C1	Wooden Box, Grid C1	Wooden Box, Grid C1
Dibenzofuran	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
2,4-Dinitrotoluene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Diethylphthalate	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Fluorene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
4-Chlorophenyl-phenylether	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
4-Nitroaniline	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Diphenylamine	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
4-Bromophenyl-phenylether	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Hexachlorobenzene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Pentaachlorophenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Phenanthrene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Anthracene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Carbazol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Di-n-Butylphthalate	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Fluoranthene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
4,6-Dinitro-2-methylphenol	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Pyrene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Butylbenzylphthalate	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
3,3'-Dichlorobenzidine	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Benzo(a)Anthracene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Chrysene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
bis(2-ethylhexyl)Phthalate	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Di-n-octylphthalate	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Benzo(b)fluoranthene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Benzo(k)fluoranthene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Benzo(a)pyrene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Indeno(1,2,3-cd)pyrene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Dibenzo(a,h)anthracene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)
Benzo(g,h,i)perylene	350 (U)	390 (U)	380 (U)	370 (U)	400 (U)	380 (U)	380 (U)	360 (U)	380 (U)	360 (U)	390 (U)	---	370 (U)

Table A-1. (continued).

TSF-26 Stockpile and Wooden Box Sample Numbers, Sample Locations, and Corresponding Sample Results													
Stockpile #1, Grid E1	IRD019	IRD020	IRD021	IRD022	IRD023	IRD024	IRD025	IRD026	IRD027	IRD028	IRD029	IRD030	IRD031
	Stockpile #1, Grid E1	Stockpile #1, Grid F4	Stockpile #2, Grid B2	Stockpile #2, Grid D3	Stockpile #3, Grid D3	Stockpile #3, Grid F6	Stockpile #3, Grid F6	Stockpile #3, Box, Grid M3	Wooden Box, Grid E2	Wooden Box, Grid E4	Wooden Box, Grid C1	IRD04901IRE	IRD04902 Box, Grid C1
PCBs (units ug/kg)													
Aroclor-1016	440 (U)	400 (U)	550 (U)	560 (U)	460 (U)	530 (U)	400 (U)	410 (U)	420 (U)	530 (U)	540 (U)	---	390 (U)
Aroclor-1221	890 (U)	800 (U)	1100 (U)	1100 (U)	930 (U)	1100 (U)	790 (U)	820 (U)	850 (U)	1100 (U)	1100 (U)	---	780 (U)
Aroclor-1232	440 (U)	400 (U)	550 (U)	560 (U)	460 (U)	530 (U)	400 (U)	410 (U)	420 (U)	530 (U)	540 (U)	---	390 (U)
Aroclor-1242	440 (U)	400 (U)	550 (U)	560 (U)	460 (U)	530 (U)	400 (U)	410 (U)	420 (U)	530 (U)	540 (U)	---	390 (U)
Aroclor-1248	440 (U)	400 (U)	550 (U)	560 (U)	460 (U)	530 (U)	400 (U)	410 (U)	420 (U)	530 (U)	540 (U)	---	390 (U)
Aroclor-1254	440 (U)	400 (U)	550 (U)	560 (U)	460 (U)	530 (U)	400 (U)	410 (U)	420 (U)	530 (U)	540 (U)	---	390 (U)
Aroclor-1260	440 (U)	400 (U)	550 (U)	560 (U)	460 (U)	530 (U)	400 (U)	410 (U)	420 (U)	530 (U)	540 (U)	---	390 (U)
Aroclor-1262	440 (U)	400 (U)	550 (U)	560 (U)	460 (U)	530 (U)	400 (U)	410 (U)	420 (U)	530 (U)	540 (U)	---	390 (U)
Aroclor-1268	440 (U)	400 (U)	550 (U)	560 (U)	460 (U)	530 (U)	400 (U)	410 (U)	420 (U)	530 (U)	540 (U)	---	390 (U)
Total Metals (units mg/kg)													
Aluminum	14900	14800	15300	18400	16900	16400	14000	21700	16100	22100	16600	---	17600
Antimony	3.83 (U)	3.83 (U)	3.83 (U)	3.78 (U)	3.82 (U)	3.79 (U)	3.77 (U)	3.78 (U)	3.84 (U)	3.79 (U)	3.87 (U)	---	3.86 (U)
Barium	201	208	206	231	204	194	207	271	215	260	229	---	233
Beryllium	0.889	0.919	0.96	1.06	0.951	0.794	0.898	1.08	0.954	1.14	0.922	---	0.920
Cadmium	1.56 (B)	1.26 (B)	1.82 (B)	1.53 (B)	1.77	1.57 (B)	1.50 (B)	1.96 (B)	1.75 (B)	2.40	1.86 (B)	---	1.42 (B)
Calcium	77900	60000	61500	64400	65300	135000	62700	63000	62300	59900	63000	---	59500
Chromium	32.1	32.3	32.7	39.9	36.3	46.8	31.0	45.4	36.9	47.4	37.2	---	38.8
Cobalt	8.26	8.67	8.88	9.39	8.21	6.37	8.78	9.45	8.73	8.55	8.60	---	8.56
Copper	23.5	25.6	26.7	27.0	24.6	18.7	26.2	27.4	26.3	25.7	25.0	---	24.2
Iron	17800	19200	19600	20500	18300	14300	18600	22400	20400	20900	20000	---	19700
Magnesium	11700	11500	11700	12300	11200	9960	11300	12700	11700	11900	11800	---	11500
Manganese	412	379	382	400	370	268	388	400	383	417	404	---	395
Nickel	34.1	32.9	35.3	36.5	32.6	30.0	33.0	37.0	35.9	36.0	34.0	---	34.6
Potassium	3050	2890	2910	3790	3550	3970	2780	4660	1350	5050	3280	---	3630
Silver	0.834 (U)	0.775 (U)	0.826 (U)	0.810 (U)	0.802 (U)	0.819 (U)	0.824 (U)	0.810 (U)	0.821 (U)	0.811 (U)	0.828 (U)	---	0.826 (U)
Sodium	282	250	715	666	363	316	352	698	494	624	448	---	400
Vanadium	40.1	42.2	38.6	50.0	44.6000	45.7	36.9	61.0	46.5	64.3	50.3	---	53.4
Zinc	115	112	125	123	116	90.0	120	130	122.0	120	111.0	---	108
Mercury	0.008 (U)	0.077 (B)	0.054 (B)	0.021 (B)	0.059 (B)	0.019 (B)	0.054 (B)	0.008 (U)	0.018 (B)	0.262	0.008 (U)	---	0.008 (U)
Arsenic	8.51 (B)	11.500	9.88 (B)	11.4	8.95 (B)	7.21 (B)	9.66 (B)	8.69 (B)	12.5	10.9	8.89 (B0)	---	11.3
Lead	28.1	28.300	29.0	31.5	27.0	13.9	26.4	26.0	38.4	37.7	31.9	---	30.2
Selenium	0.644 (B)	0.570 (B)	0.772 (B)	0.754 (B)	0.510 (B)	0.534 (B)	0.652 (B)	0.918 (B)	1.08 (B)	0.43 (B)	0.444 (B)	---	0.642 (B)
Thallium	0.828 (U)	0.769 (U)	0.82 (U)	0.804 (U)	0.796 (U)	0.813 (U)	0.818 (U)	0.812 (U)	0.822 (U)	0.806 (U)	0.813 (U)	---	0.804 (U)

Table A-1. (continued).

	IRD019	IRD020	IRD021	IRD022	IRD023	IRD02401	IRD046	IRD047	IRD048	IRD04901	IRD04901RE	IRD04902
	Stockpile #1, Grid E1	Stockpile #1, Grid F4	Stockpile #2, Grid B2	Stockpile #2, Grid D3	Stockpile #3, Grid D3	Stockpile #3, Grid F6	Stockpile #3, Grid F6	Wooden Box, Grid M3	Wooden Box, Grid E2	Wooden Box, Grid E4	Wooden Box, Grid C1	Wooden Box, Grid C1
TCLP Metals (units ug/L)												
Arsenic	20 (U)	20.0 (U)	20.0 (U)	20.0 (U)	20.0 (U)	20.0 (U)	20.0 (U)	20.0 (U)	20.0 (U)	20.0 (U)	---	20.0 (U)
Barium	1910	2080	1550	1560	1870	1760	1770	1710	1660	1670	---	1890
Cadmium	2.44 (B)	3.22 (B)	4.00 (B)	4.67 (B)	2.44 (B)	3.22 (B)	4.33 (B)	7.44 (B)	7.11 (B)	8.00 (B)	---	1.33 (U)
Chromium	2.78 (U)	3.56 (B)	8.33 (B)	19.8 (B)	4.44 (B)	2.78 (U)	6.33 (B)	16.8 (B)	4.22 (B)	6.78 (B)	---	2.78 (U)
Lead	30.8 (U)	30.8 (U)	30.8 (U)	30.8 (U)	30.8 (U)	30.8 (U)	30.8 (U)	30.8 (U)	30.8 (U)	30.8 (U)	---	30.8 (U)
Selenium	16.6 (U)	16.6 (U)	16.6 (U)	16.6 (U)	16.6 (U)	16.6 (U)	16.6 (U)	16.6 (U)	16.6 (U)	16.6 (U)	---	16.6 (U)
Silver	4.59 (U)	4.59 (U)	4.59 (U)	4.59 (U)	4.59 (U)	4.59 (U)	4.59 (U)	4.59 (U)	4.59 (U)	4.59 (U)	---	4.59 (U)
Mercury	0.050 (U)	0.050 (U)	0.050 (U)	0.050 (U)	0.050 (U)	0.050 (U)	0.050 (U)	0.050 (U)	0.050 (U)	0.050 (U)	---	0.050 (U)
Radionuclides (units pCi/g, negative values denote sample result is less than blank)												
Gross Alpha	---	0.0537	---	0.172	-0.0643	---	---	---	---	0.0	---	---
Gross Beta	---	1.36	---	76.6	2.26	---	---	---	---	3710	---	---
Sr-89	---	-0.448	---	-108	-1.09	---	---	---	---	-954	---	---
Sr-90	---	1.77	---	227	1.45	---	---	---	---	6910	---	---
Co-60	---	0.098	---	3.1	1.26	---	---	4.2	---	---	---	---
Cs-137	---	127	---	187	3700	---	---	94	199000	710000	---	---
										45000		

a. Sample was reanalyzed for VOCs; reanalysis for other constituents was not required

b. Samples not collected and analyzed for these constituents, in accordance with the sample and analysis plan tables